

Claims

- [c1] 1. A vehicle control system comprising:
one or more vehicle components for adjusting secondary vehicle functions;
a dialog-based speech recognition component that responds to voice commands from a vehicle occupant, the speech recognition component communicating with the one or more vehicle components; and
a human machine interface that also communicates with the one or more vehicle components, the human machine interface capable of communicating in combination with and separate from the speech recognition component.
- [c2] 2. The vehicle control system of claim 1 wherein the speech recognition component comprises:
1. a first translating component for translating a voice command from a vehicle occupant into a form which communicates a control signal to the one or more vehicle components;
 2. a prompting component for prompting the vehicle occupant to input information specifying a vehicle parameter for which information in the voice com-

mand was not provided; and

3. a second translating component for translating the information provided in step b into a form which communicates a control signal to the one or more secondary vehicle components.

[c3] 3. The vehicle control system of claim 1 wherein comprises a module for grouping parameters together for each secondary vehicle function to form a vehicle control mode, the vehicle control mode being selectable by a vehicle occupant such that the vehicle occupant may then specify parameters for a selected vehicle control mode.

[c4] 4. The vehicle control system of claim 3 wherein the selected vehicle control mode is selectable by a voice command.

[c5] 5. The vehicle control system of claim 3 wherein the selected vehicle control mode is selectable by the vehicle occupant interacting with the human machine interface.

[c6] 6. The vehicle control system of claim 3 wherein the vehicle control mode is selected from the group consisting of a climate control mode in which the vehicle occupant specifies parameters that adjust climate in a vehicle passenger compartment; a communications mode in which the vehicle occupant specifies parameters related to a

telephone located in the vehicle passenger compartment; an entertainment mode in which the vehicle occupant specifies parameters that control a vehicle entertainment system; a navigation mode in which the vehicle occupant specifies parameters related to vehicle position; a vehicle systems mode in which the vehicle occupant specifies parameters related to the vehicle control system or any other predetermined vehicle parameter; and combinations thereof.

[c7] 7. The vehicle control system of claim 1 wherein the speech recognition component comprises a central processing unit executing a sequence of computer commands that translates the voice command into a signal that is communicatable to the one or more system components.

[c8] 8. The vehicle control system of claim 1 wherein the human machine interface is selected from the group consisting of a touch panel display, a switch, a capacitive sensor, a resistive sensor, a wheel, a knob, and a camera.

[c9] 9. The vehicle control system of claim 1 wherein: the vehicle control system further comprises an interfacing electronics system for providing a primary control analog or digital signal to the one or more vehicle com-

ponents; and

the speech recognition component comprises a translating component for translating the voice command into a secondary control digital or analog signal which is provided to the interfacing electronics system.

[c10] 10. The vehicle control system of claim 1 wherein:
the vehicle control system further comprises an interfacing electronics system for providing a primary control analog or digital signal to the one or more vehicle components; and
the human machine interface comprises a translating component for translating the voice command into a secondary control digital or analog signal which is provided to the interfacing electronics system.

[c11] 11. The vehicle control system of claim 1 wherein the speech recognition component comprises a translating component for translating the voice command into a digital or analog signal which is provided to the one or more vehicle components.

[c12] 12. The vehicle control system of claim 1 wherein the human machine interface comprises a translating component for translating an input from a vehicle occupant into a digital or analog signal which is provided to the one or more vehicle components.

[c13] 13. A vehicle control system comprising:
one or more vehicle components for adjusting secondary vehicle functions;
a dialog-based speech recognition component that responds to voice commands from a vehicle occupant communicating with the one or more vehicle components, the speech recognition component comprising:
1. a first translating component for translating a voice command from a vehicle occupant into a form which communicates a control signal to the one or more secondary vehicle component;
2. a prompting component for prompting the vehicle occupant to input information specifying a vehicle parameter for which information in the voice command was not provided; and
3. a second translating component for translating the information provided in step b into a form which communicates a control signal to the one or more secondary vehicle components; and
a human machine interface that also communicates with the one or more vehicle components, the human machine interface capable of communicating in combination with and separate from the speech recognition compo-

nent.

- [c14] 14. The vehicle control system of claim 13 wherein the vehicle control system comprises a component for grouping parameters together for each secondary vehicle function to form a vehicle control mode, the vehicle control mode selectable by a vehicle occupant such that the vehicle occupant may then specify parameters for a selected vehicle control mode.
- [c15] 15. The vehicle control system of claim 14 wherein the selected vehicle control mode is selected by a voice command.
- [c16] 16. The vehicle control system of claim 14 wherein the selected vehicle control mode is selected by the vehicle occupant interacting with the human machine interface.
- [c17] 17. The vehicle control system of claim 14 wherein the vehicle control mode is selected from the group consisting of a climate control mode in which the vehicle occupant specifies parameters that adjust climate in a vehicle passenger compartment; a communications mode in which the vehicle occupant specifies parameters related to a telephone located in the vehicle passenger compartment; an entertainment mode in which the vehicle occupant specifies parameters that control a vehicle enter-

tainment system; a navigation mode in which the vehicle occupant specifies parameters related to vehicle position; a vehicle systems mode in which the vehicle occupant specifies parameters related to the vehicle control system or any other predetermined vehicle parameter; and combinations thereof.

[c18] 18. The vehicle control system of claim 13 wherein the speech recognition component comprises a central processing unit executing a sequence of computer commands that translates the voice command into a signal which is useable to communicate with the one or more system components.

[c19] 19. The vehicle control system of claim 13 wherein the human machine interface is selected from the group consisting of a touch panel display, a switch, a capacitive sensor, a resistive sensor, a wheel, a knob, and a camera.

[c20] 20. The vehicle control system of claim 13 wherein:
the vehicle control system further comprises an interfacing electronics system for providing a primary control analog or digital signal to the one or more vehicle components; and
the speech recognition component comprises a translating component for translating the voice command into a

secondary control digital or analog signal which is provided to the interfacing electronics system.

[c21] 21. The vehicle control system of claim 13 wherein: the vehicle control system further comprises an interfacing electronics system for providing a primary control analog or digital signal to the one or more vehicle components; and the speech recognition component comprises a component for translating the voice command into a secondary control digital or analog signal which is provided to the interfacing electronics system.

[c22] 22. The vehicle control system of claim 13 wherein the speech recognition component comprises a translating component for translating the voice command into a digital or analog signal which is provided to the one or more vehicle components.

[c23] 23. The vehicle control system of claim 13 wherein the human machine interface comprises a translating component for translating an input from a vehicle occupant into a digital or analog signal which is provided to the one or more vehicle components.

[c24] 24. A method for controlling secondary vehicle functions, the method comprising:

- a) translating a voice command from a vehicle occupant into a form which communicates a control signal to the one or more secondary vehicle component;
- b) prompting the vehicle occupant to input information specifying a vehicle parameter for which information in the voice command was not provided;
- c) translating the information provided in step b into a form which communicates a control signal to the one or more secondary vehicle components; and
- d) translating an input if provided from the vehicle occupant to a human machine interface into a form which communicates a control signal to the one or more secondary vehicle component.

[c25] 25. The method of claim 24 wherein parameters are grouped together for each secondary vehicle function to form a vehicle control mode, the vehicle control mode selectable by a vehicle occupant such that the vehicle occupant may specify parameters for a selected vehicle control mode after the vehicle mode is selected by the vehicle occupant.

- [c26] 26. The method of claim 25 wherein the selected vehicle control mode is selected by a voice command.
- [c27] 27. The method of claim 25 wherein the selected vehicle control mode is selected by the vehicle occupant interacting with the human machine interface.
- [c28] 28. The method of claim 25 wherein the vehicle control mode is selected from the group consisting of a climate control mode in which the vehicle occupant specifies parameters that adjust climate in a vehicle passenger compartment; a communications mode in which the vehicle occupant specifies parameters related to a telephone located in the vehicle passenger compartment; an entertainment mode in which the vehicle occupant specifies parameters that control a vehicle entertainment system; a navigation mode in which the vehicle occupant specifies parameters related to vehicle position; a vehicle systems mode in which the vehicle occupant specifies parameters related to the vehicle control system or any other predetermined vehicle parameter; and combinations thereof.
- [c29] 29. The method of claim 24 wherein step a is performed by a speech recognition component.
- [c30] 30. The method of claim 29 wherein the speech recogni-

tion component comprises a central processing unit executing a sequence of computer commands that translates the voice command into a signal which is useable to communicate with the one or more system components.

[c31] 31. The method of claim 24 wherein the human machine interface is selected from the group consisting of a touch panel display, a switch, a capacitive sensor, a resistive sensor, a wheel, a knob, and a camera.

[c32] 32. The method of claim 24 wherein the speech recognition component translates the voice command into a first digital or analog signal which is provided to an interfacing electronics system, the interfacing electronics system providing a second analog or digital signal to the one or more vehicle components.

[c33] 33. The method of claim 24 wherein the human machine interface translates an input from a vehicle occupant into a digital or analog signal which is provided to an interfacing electronics system, the interfacing electronics system providing a second analog or digital signal to the one or more vehicle components.

[c34] 34. The method of claim 24 wherein the speech recognition component translates the voice command into a

digital or analog signal which is provided to the one or more vehicle components.

[c35] 35. The method of claim 24 wherein the human machine interface translates an input from a vehicle occupant into a digital or analog signal which is provided to the one or more vehicle components.